COMMISSIONER'S BULLETINS
BOSTON INSPECTIONAL SERVICES

YEAR 1994

Commissioner's Bulletin

Inspectional Services Department
Boston, MA

Number: 94-3 **Page** 1 **of** 1

Date: December 5, 1994

Subject:

Testing/Approval of Sprinkler Permits

Determination:

As required by NFPA 13 Chapter 8-1 the installer shall perform all required acceptance tests for sprinkler systems and complete the "Contractor's Material and Test Certificate". (attached) This certificate(s) shall be forwarded to the authority having jurisdiction prior to asking for approval of the installation. The plumbing inspector shall require and attach the certificate to the inspectors copy of the sprinkler permit prior to close-out of the permit. No certificate of occupancy shall be issued without the test information.

John Eade

Signed:
Commissioner
Inspectional Services Department

Contractor's Material and Test Certificate for Aboveground Piping

PROCEDURE
Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME | DATE

PROPERTY ADDRESS

PLANS

ACCEPTED BY APPROVING AUTHORITIES (NAMES)

ADDRESS

INSTALLATION CONFORMS TO ACCEPTED PLANS ☐ YES ☐ NO

EQUIPMENT USED IS APPROVED ☐ YES ☐ NO
IF NO, EXPLAIN DEVIATIONS

INSTRUCTIONS

HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT? ☐ YES ☐ NO
IF NO, EXPLAIN

HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:
1. SYSTEM COMPONENTS INSTRUCTIONS ☐ YES ☐ NO
2. CARE AND MAINTENANCE INSTRUCTIONS ☐ YES ☐ NO
3. NFPA 25 ☐ YES ☐ NO

LOCATION OF SYSTEM

SUPPLIES BUILDINGS

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING

PIPE AND FITTINGS

Type of Pipe _____
Type of Fittings _____

ALARM VALVE OR FLOW INDICATOR

ALARM DEVICE			MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION	
TYPE	MAKE	MODEL	MIN.	SEC.

DRY PIPE OPERATING TEST

DRY VALVE			Q. O. D.		
MAKE	MODEL	SERIAL NO.	MAKE	MODEL	SERIAL NO.

	TIME TO TRIP THROUGH TEST CONNECTION*		WATER PRESSURE	AIR PRESSURE	TRIP POINT AIR PRESSURE	TIME WATER REACHED TEST OUTLET*		ALARM OPERATED PROPERLY	
	MIN.	SEC.	PSI	PSI	PSI	MIN.	SEC.	YES	NO
Without Q.O.D.									
With Q.O.D.									

IF NO, EXPLAIN

*MEASURED FROM TIME INSPECTOR'S TEST CONNECTION IS OPENED.

Figure 8-1(a).

DELUGE & REACTION VALVES

OPERATION ☐ PNEUMATIC ☐ ELECTRIC ☐ HYDRAULIC

PIPING SUPERVISED ☐ YES ☐ NO | DETECTING MEDIA SUPERVISED ☐ YES ☐ NO

DOES VALVE OPERATE FROM THE MANUAL TRIP AND/OR REMOTE CONTROL STATIONS ☐ YES ☐ NO

IS THERE AN ACCESSIBLE FACILITY IN EACH CIRCUIT FOR TESTING ☐ YES ☐ NO | IF NO, EXPLAIN

MAKE	MODEL	DOES EACH CIRCUIT OPERATE SUPERVISION LOSS ALARM		DOES EACH CIRCUIT OPERATE VALVE RELEASE		MAXIMUM TIME TO OPERATE RELEASE	
		YES	NO	YES	NO	MIN.	SEC.

PRESSURE REDUCING VALVE TEST

LOCATION & FLOOR	MAKE & MODEL	SETTING	STATIC PRESSURE		RESIDUAL PRESSURE (FLOWING)		FLOW RATE
			INLET (PSI)	OUTLET (PSI)	INLET (PSI)	OUTLET (PSI)	FLOW (GPM)

TEST DESCRIPTION

HYDROSTATIC: Hydrostatic tests shall be made at not less than 200 psi (13.6 bars) for two hours or 50 psi (3.4 bars) above static pressure in excess of 150 psi (10.2 bars) for two hours. Differential dry-pipe valve clappers shall be left open during test to prevent damage. All aboveground piping leakage shall be stopped.

PNEUMATIC: Establish 40 psi (2.7 bars) air pressure and measure drop, which shall not exceed 1-1/2 psi (0.1 bars) in 24 hours. Test pressure tanks at normal water level and air pressure and measure air pressure drop, which shall not exceed 1-1/2 psi (0.1 bars) in 24 hours.

TESTS

ALL PIPING HYDROSTATICALLY TESTED AT ____ PSI FOR ____ HRS. | IF NO, STATE REASON

DRY PIPING PNEUMATICALLY TESTED ☐ YES ☐ NO

EQUIPMENT OPERATES PROPERLY ☐ YES ☐ NO

DO YOU CERTIFY AS THE SPRINKLER CONTRACTOR THAT ADDITIVES AND CORROSIVE CHEMICALS, SODIUM SILICATE OR DERIVATIVES OF SODIUM SILICATE, BRINE, OR OTHER CORROSIVE CHEMICALS WERE NOT USED FOR TESTING SYSTEMS OR STOPPING LEAKS?
☐ YES ☐ NO

DRAIN TEST | READING OF GAGE LOCATED NEAR WATER SUPPLY TEST CONNECTION: _____ PSI | RESIDUAL PRESSURE WITH VALVE IN TEST CONNECTION OPEN WIDE _____ PSI

UNDERGROUND MAINS AND LEAD IN CONNECTIONS TO SYSTEM RISERS FLUSHED BEFORE CONNECTION MADE TO SPRINKLER PIPING.
VERIFIED BY COPY OF THE U FORM NO. 85B ☐ YES ☐ NO | OTHER EXPLAIN
FLUSHED BY INSTALLER OF UNDERGROUND SPRINKLER PIPING ☐ YES ☐ NO

IF POWDER DRIVEN FASTENERS ARE USED IN CONCRETE, HAS REPRESENTATIVE SAMPLE TESTING BEEN SATISFACTORILY COMPLETED? ☐ YES ☐ NO | IF NO, EXPLAIN

BLANK TESTING GASKETS

NUMBER USED	LOCATIONS	NUMBER REMOVED

WELDING

WELDED PIPING ☐ YES ☐ NO

IF YES...

DO YOU CERTIFY AS THE SPRINKLER CONTRACTOR THAT WELDING PROCEDURES COMPLY WITH THE REQUIREMENTS OF AT LEAST AWS D10.9, LEVEL AR-3? ☐ YES ☐ NO

DO YOU CERTIFY THAT THE WELDING WAS PERFORMED BY WELDERS QUALIFIED IN COMPLIANCE WITH THE REQUIREMENTS OF AT LEAST AWS D10.9, LEVEL AR-3? ☐ YES ☐ NO

DO YOU CERTIFY THAT WELDING WAS CARRIED OUT IN COMPLIANCE WITH A DOCUMENTED QUALITY CONTROL PROCEDURE TO INSURE THAT ALL DISCS ARE RETRIEVED, THAT OPENINGS IN PIPING ARE SMOOTH, THAT SLAG AND OTHER WELDING RESIDUE ARE REMOVED, AND THAT THE INTERNAL DIAMETERS OF PIPING ARE NOT PENETRATED? ☐ YES ☐ NO

CUTOUTS (DISCS)

DO YOU CERTIFY THAT YOU HAVE A CONTROL FEATURE TO ENSURE THAT ALL CUTOUTS (DISCS) ARE RETRIEVED? ☐ YES ☐ NO

Figure 8-1(a) (cont).

HYDRAULIC DATA NAMEPLATE	NAMEPLATE PROVIDED ☐ YES ☐ NO	IF NO, EXPLAIN
REMARKS	DATE LEFT IN SERVICE WITH ALL CONTROL VALVES OPEN:	
SIGNATURES	NAME OF SPRINKLER CONTRACTOR	
	TESTS WITNESSED BY	
	FOR PROPERTY OWNER (SIGNED) TITLE	DATE
	FOR SPRINKLER CONTRACTOR (SIGNED) TITLE	DATE
ADDITIONAL EXPLANATION AND NOTES		

Figure 8-1(a) (cont).

8-2.2.5 All underground piping shall be hydrostatically tested in accordance with NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*. The allowable leakage shall be within the limits prescribed by NFPA 24 and shall be recorded on the test certificate.

8-2.2.6 Provision shall be made for the proper disposal of water used for flushing or testing.

8-2.2.7* Test blanks shall have painted lugs protruding in such a way as to clearly indicate their presence. The test blanks shall be numbered, and the installing contractor shall have a record-keeping method ensuring their removal after work is completed.

8-2.2.8 Differential-Type Valves. When subject to hydrostatic test pressures, the clapper of a differential-type valve shall be held off its seat to prevent damaging the valve.

8-2.3 Dry System Air Test. In addition to the standard hydrostatic test, an air pressure leakage test at 40 psi (2.8 bars) shall be conducted for 24 hours. Any leakage that results in a loss of pressure in excess of 1½ psi (0.1 bar) for the 24 hours shall be corrected.

8-2.4 System Operational Tests.

8-2.4.1 Waterflow detecting devices including the associated alarm circuits shall be flow tested through the inspector's test connection to result in an alarm on the premises within 5 min after such flow begins.

8-2.4.2 A working test of the dry pipe valve alone, and with a quick-opening device, if installed, shall be made by opening the inspector's test connection. The test shall measure the time to trip the valve and the time for water to be discharged from the inspector's test connection. All times shall be measured from the time the inspector's test connection is completely opened. The results shall be recorded using the Contractor's Material and Test Certificate for Aboveground Piping.

8-2.4.3 The automatic operation of a deluge or preaction valve shall be tested in accordance with the manufacturer's instructions. The manual and remote control operation, where present, shall also be tested.

8-2.4.4 The main drain valve shall be opened and remain open until the system pressure stabilizes. The static and residual pressures shall be recorded on the contractor's test certificate.

8-2.5 Each pressure-reducing valve shall be tested upon completion of installation to ensure proper operation under flow and no-flow conditions. Testing shall verify that the device properly regulates outlet pressure at both maximum and normal inlet pressure conditions. The results of the flow test of each pressure-reducing valve shall be recorded on the contractor's test certificate. The results shall include the static and residual inlet pressures, static and residual outlet pressures, and the flow rate.

8-2.6 Operating tests shall be made of exposure protection systems upon completion of the installation, where such tests do not risk water damage to the building on which they are installed or to adjacent buildings.

8-3 Circulating Closed Loop Systems. For sprinkler systems with nonfire protection connections, additional information shall be appended to the Contractor's Material and Test Certificate shown in Figure 8-1(a) as follows:

(a) Certification that all auxiliary devices, such as heat pumps, circulating pumps, heat exchangers, radiators, and luminaries, if a part of the system, have a pressure rating of at least 175 psi or 300 psi (12.1 or 20.7 bars) if exposed to pressures greater than 175 psi (12.1 bars).

Contractor's Material and Test Certificate for Underground Piping

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME		DATE
PROPERTY ADDRESS		
PLANS	ACCEPTED BY APPROVING AUTHORITIES (NAMES)	
	ADDRESS	
	INSTALLATION CONFORMS TO ACCEPTED PLANS	☐ YES ☐ NO
	EQUIPMENT USED IS APPROVED IF NO, STATE DEVIATIONS	☐ YES ☐ NO
INSTRUCTIONS	HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT? IF NO, EXPLAIN	☐ YES ☐ NO
	HAVE COPIES OF APPROPRIATE INSTRUCTIONS AND CARE AND MAINTENANCE CHARTS BEEN LEFT ON PREMISES? IF NO, EXPLAIN	☐ YES ☐ NO
LOCATION	SUPPLIES BUILDINGS	
UNDERGROUND PIPES AND JOINTS	PIPE TYPES AND CLASS	TYPE JOINT
	PIPE CONFORMS TO _____ STANDARD FITTINGS CONFORM TO _____ STANDARD IF NO, EXPLAIN	☐ YES ☐ NO ☐ YES ☐ NO
	JOINTS NEEDING ANCHORAGE CLAMPED, STRAPPED, OR BLOCKED IN ACCORDANCE WITH _____ STANDARD IF NO, EXPLAIN	☐ YES ☐ NO
TEST DESCRIPTION	FLUSHING: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags at outlets such as hydrants and blow-offs. Flush at flows not less than 390 GPM (1476 L/min) for 4-inch pipe, 880 GPM (3331 L/min) for 6-inch pipe, 1560 GPM (5905 L/min) for 8-inch pipe, 2440 GPM (9235 L/min) for 10-inch pipe, and 3520 GPM (13323 L/min) for 12-inch pipe. When supply cannot produce stipulated flow rates, obtain maximum available. HYDROSTATIC: Hydrostatic tests shall be made at not less than 200 psi (13.8 bars) for two hours or 50 psi (3.4 bars) above static pressure in excess of 150 psi (10.3 bars) for two hours. LEAKAGE: New pipe laid with rubber gasketed joints shall, if the workmanship is satisfactory, have little or no leakage at the joints. The amount of leakage at the joints shall not exceed 2 qts. per hr. (1.89 L/h) per 100 joints irrespective of pipe diameter. The leakage shall be distributed over all joints. If such leakage occurs at a few joints the installation shall be considered unsatisfactory and necessary repairs made. The amount of allowable leakage specified above may be increased by 1 fl oz per in. valve diameter per hr. (30 mL/25 mm/h) for each metal seated valve isolating the test section. If dry barrel hydrants are tested with the main valve open, so the hydrants are under pressure, an additional 5 oz per minute (150 mL/min) leakage is permitted for each hydrant.	
FLUSHING TESTS	NEW UNDERGROUND PIPING FLUSHED ACCORDING TO _____ STANDARD BY (COMPANY) IF NO, EXPLAIN	☐ YES ☐ NO
	HOW FLUSHING FLOW WAS OBTAINED ☐ PUBLIC WATER ☐ TANK OR RESERVOIR ☐ FIRE PUMP	THROUGH WHAT TYPE OPENING ☐ HYDRANT BUTT. ☐ OPEN PIPE
	LEAD-INS FLUSHED ACCORDING TO _____ STANDARD BY (COMPANY) IF NO, EXPLAIN	☐ YES ☐ NO
	HOW FLUSHING FLOW WAS OBTAINED ☐ PUBLIC WATER ☐ TANK OR RESERVOIR ☐ FIRE PUMP	THROUGH WHAT TYPE OPENING ☐ Y CONN. TO FLANGE & SPIGOT ☐ OPEN PIPE

Figure 8-1(b).

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HYDROSTATIC TEST	ALL NEW UNDERGROUND PIPING HYDROSTATICALLY TESTED AT _____ PSI FOR _____ HOURS	JOINTS COVERED ☐ YES ☐ NO
LEAKAGE TEST	TOTAL AMOUNT OF LEAKAGE MEASURED _____ GALS. _____ HOURS	
	ALLOWABLE LEAKAGE _____ GALS. _____ HOURS	
HYDRANTS	NUMBER INSTALLED / TYPE AND MAKE	ALL OPERATE SATISFACTORILY ☐ YES ☐ NO
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN IF NO, STATE REASON	☐ YES ☐ NO
	HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE WITH THOSE OF FIRE DEPARTMENT ANSWERING ALARM	☐ YES ☐ NO
REMARKS	DATE LEFT IN SERVICE	
SIGNATURES	NAME OF INSTALLING CONTRACTOR	
	TESTS WITNESSED BY	
	FOR PROPERTY OWNER (SIGNED) / TITLE / DATE	
	FOR INSTALLING CONTRACTOR (SIGNED) / TITLE / DATE	
ADDITIONAL EXPLANATION AND NOTES		

Figure 8-1(b) (cont).

(b) All components of sprinkler system and auxiliary system have been pressure tested as a composite system in accordance with 8-2.2.

(c) Waterflow tests have been conducted and waterflow alarms have operated while auxiliary equipment is in each of the possible modes of operation.

(d) With auxiliary equipment tested in each possible mode of operation and with no flow from sprinklers or test connection, waterflow alarm signals did not operate.

(e) Excess temperature controls for shutting down the auxiliary system have been properly field tested.

8-4 Instructions.

8-4.1 The installing contractor shall provide the owner with:

(a) All literature and instructions provided by the manufacturer describing proper operation and maintenance of any equipment and devices installed.

(b) Publication titled NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*

8-5* Hydraulic Design Information Sign. The installing contractor shall identify a hydraulically designed sprinkler system with a permanently marked weatherproof metal or rigid plastic sign secured with corrosion-resistant wire, chain, or other approved means. Such signs shall be placed at the alarm valve, dry pipe valve, preaction valve, or deluge valve supplying the corresponding hydraulically designed area. The sign shall include the following information:

(a) Location of the design area or areas.

(b) Discharge densities over the design area or areas.

(c) Required flow and residual pressure demand at the base of riser.

(d) Hose stream demand included in addition to the sprinkler demand.

8-6 Circulating Closed Loop Systems. Discharge tests of sprinkler systems with nonfire protection connections shall be conducted using system test connections described in 2-7.2. Pressure gauges shall be installed at critical points and readings taken under various modes of auxiliary equipment operation. Waterflow alarm signals shall be responsive to discharge of water through system test pipes while auxiliary equipment is in each of the possible modes of operation.

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Date: 8/8/94

Subject:

Issuing Interim Permits

Determination:

The purpose of this bulletin is to establish guidelines for the issuance of Interim Permits **while an applicant is awaiting receipt of a signed approved appeal decision.**

Effective August 15, 1994, in cases where:

1. an application has been heard and **approved** by the Board of Appeal

2. all pre- construction provisos have been met (to be determined by contacting the Board of Appeals)

3. the work is in compliance with the Massachusetts State Building Code

4. the applicant signs an indemnification agreement (copy attached)

The Commissioner and/or the Assistant Commissioner for Buildings and Structures may issue an Interim Short Form Permit. The Commissioner and/or the Assistant Commissioner will stipulate the scope of work and time period to be covered by the interim permit.

The applicant will pay a fee of $3.00 per thousand for the actual cost associated with the work on the short form. Counter staff will include a note on the short form saying: See long form for total scope of work and balance of fee.

The Building Permit will be issued when the appeal application is signed by the Board of Appeal.

Gary F. Moccia

Signed:
Assistant Commissioner for Buildings and Structures
Inspectional Services Department

PERMIT BOND

Date: July , 1994

Permit Number:_____

KNOW ALL MEN BY THESE PRESENTS:

That I, _____ of _____ _____, as principal am held and firmly bound unto the City of Boston, Massachusetts as obligee in the some of: _____Dollars ($_____), well and truly to be paid, and for the payment of which I hereby bind myself, my heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of the above obligation are such that whereas the above bounden principal has applied for a permit to engage at _____, for the purposes of constructing a _____ as more fully described in Boston Zoning Code, article eight (section ____) which permit has been granted temporarily pursuant to the provisions of the state building code and must be renewed at intervals of ____days hereafter and which may be revoked at any time without notice and without need for showing cause by the Commissioner of the City Inspectional Services Department or his designee;

Now, therefore, in consideration of said permit now or hereafter being granted, issued or renewed, said principal shall:

1. Indemnify and save harmless the City of Boston, its officials, employees, and any members of its boards and commissions and their successors, from and account of any and all judgments, claims, demands, losses, costs, expenses, or liabilities of any kind whatsoever which said City of Boston and any or all of the persons above enumerated may sustain or which may be recovered from it or them, from or by reason of the issuance of each such temporary permit, or by reason of any act.

neglect or thing done under or by virtue of the authority given in each such temporary permit, or in any way connected with, relating to, or growing out of any work performed by said principal, his agents and employees, or any sub-contractor or anyone in any way under his supervision, direction and or control.

2. In all respects by bound hereby to any and all applicable requirements and provisions required to be in this bond by existing and hereafter existing ordinances, rules and regulations of the City of Boston, and other laws, the same as though such requirements and provisions were fully set forth in this bond, and by reference such requirements and provisions are made a part hereof;

3. Comply with the faithfully observe and obey all applicable rules regulations, and ordinances of the City of Boston, now or hereafter existing and all other applicable laws now or hereafter existing affecting or relating to the carrying on of such business or occupation.

4. Promptly pay all damages or loss that may occur from any act, neglect, or carelessness of said principal, his agents or employees, anyone under his supervision or direction, or any sub-contractor, from such work pertaining to said business or occupation, or from poor or defective work or material;

5. Properly perform and execute and fully protect any and all work of such business or occupation undertaken by principal or under his direction and supervision, or by any agent or employee.

6. Pay any and all penalties that may be imposed during the period of any such present and future permit.

Compliance with all and several of the above enumerated items shall make this bond void. Otherwise, it shall remain in full force and effect within the City of Boston. This is a continuing bond until canceled by written notice to the City of Boston delivered to the Commissioner of its Inspectional Services Department.

In Witness Whereof, I have hereunto set my hand and seal this ___ day of July 1994.

In presence of:

_____ _____

Title: Principal
Print Name:

COMMONWEALTH OF MASSACHUSETTS

Date:_____

Then personally apppeared the above named _____ and made oath that the foregoing Foundation permit Bond by him subscribed this day was his free act and deed, before me:

_____
Notary Public
my commissioner expires: